What is claimed is:

1. A method for controlling calibration timing for a metrology tool, comprising:

(a) calibrating a metrology tool using a first parameter measured on at least one reference substrate;

(b) measuring a second parameter on at least one non-reference substrate using the metrology tool;

(c) intermittently measuring a first parameter of at least one film on at least one reference substrate using a metrology tool;

(d) determining when a first parameter measurement drift with respect to the calibrated first parameter measurement exceeds a pre-determined value; and

(e) calibrating the metrology tool in response to the first parameter measurement drift exceeding the predetermined value.

2. The method of claim 1, wherein the first parameter is film thickness.

3. The method of claim 1, wherein the second parameter is a critical dimension.

4. The method of claim 1, wherein the first parameter is film thickness and the second parameter is a critical dimension.

5. The method of claim 3, wherein the calibrating begins prior to excessive drift occurring for the critical dimension measurements performed by the metrology tool.

6. The method of claim 1 wherein the metrology tool is an optical measuring tool.

7. The method of claim 1 wherein the non-reference substrates are product substrates.

8. The method of claim 1 wherein steps (a) and (c) further comprises:
averaging the results of a plurality of said first parameter measurements.

9. The method of claim 5 further comprises performing the first parameter measurements on a plurality of substrates.

10. The method of claim 1 wherein step (c) is performed in accordance with a predefined schedule.

11. The method of claim 7, wherein the predefined schedule is a periodic time.

12. The method of claim 7, wherein the predefined schedule is defined by measuring a predefined number of non-reference substrates.

13. The method of claim 2 further comprising determining drift by subtracting the film calibrated thickness measurement from the thickness measurement of step (c).

14. Apparatus for processing semiconductor substrates comprising:

a process chamber for processing a substrate;

a metrology tool that is calibrated using a first parameter measured using a reference substrate;

means for moving processed non-reference substrates from the process chamber into the metrology tool to measure a second parameter and for intermittently moving a reference substrate into the metrology tool to measure the first parameter; and

means for comparing the measured first parameter to the calibrated first parameter to identify first parameter measurement drift and for initiating a calibration cycle for the metrology tool when the first parameter measurement drift exceeds a predetermined value, where the calibration cycle is initiated prior to excessive drift occurring for the measurements of the second parameter.

15. The apparatus of claim 14, wherein the first parameter is film thickness.

16. The apparatus of claim 15, wherein the second parameter is a critical dimension.

17. The apparatus of claim 16, wherein the first parameter is film thickness and the second parameter is a critical dimension.

18. The apparatus of claim 13, wherein the metrology tool is an optical measuring tool.

19. The apparatus of claim 13, wherein the non-reference substrates are product substrates.